Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application. The following listing provides the amended claims with deleted material crossed out and new material underlined to show the changes made.

5   **Listing of Claims:**

1.   (Currently Amended) A method of defining routes for nets in a region of a circuit layout, the method comprising:

a)   using a first set of lines to measure length of routes; and

b)   using a second set of lines to measure congestion of routes.

10   2.   (Currently Amended) The method of claim 1, wherein at least some of the lines in the first set are not in the second set.

3.   (Currently Amended) The method of claim 1, wherein the second set of lines define a plurality of congestion edges, wherein using the second set of lines comprises measuring the congestion of routes across the congestion edges.

15   4.   (Original)   The method of claim 3, wherein the routes have diagonal edges that intersect the congestion edges, wherein measuring the congestion of routes across the congestion edges comprises measuring the congestion of diagonal route edges across the congestion edges.

5.   (Original)   The method of claim 4, wherein the routes further have horizontal 20   or vertical edges that intersect the congestion edges, wherein measuring the congestion of routes

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across the congestion edges further comprises measuring the congestion of the horizontal or vertical route edges across the congestion edges.

6.   (Currently Amended) ~~The method of claim 1,~~A method of defining routes for nets in a region of a circuit layout, wherein each net has a set of pins, the method ~~further~~ comprising:

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     a)   using a first set of lines to measure length of routes;

     b)   using a second set of lines to measure congestion of routes;

     c)   using a third set of lines to partition the region into a first set of sub-regions; and

     d~~b~~)   for each net, identifying a route that traverses a group of first-set sub-
10   regions that contain the net's set of pins.

7.   (Original)   The method of claim 6, wherein the second and third sets of lines are identical.

8.   (Currently Amended) ~~The method of claim 1,~~A method of defining routes for nets in a region of a circuit layout, wherein each net has a set of pins, ~~wherein the first set of lines~~
15   ~~defines a first set of sub-regions,~~ the method ~~further~~ comprising:

     a)   using a first set of lines to measure length of routes, wherein the first set of lines defines a first set of sub-regions;

     b)   using a second set of lines to measure congestion of routes;

c) for each net, identifying a route that traverses a group of first-set sub-regions that contain the net's set of pins; wherein each route has a set of route segments, and each route segment traverses two sub-regions in the first set of sub-regions.

9. (Original) The method of claim 8 further comprising measuring the length of each route by summing the length of each route segment in the route's set of route segments.

10. (Original) The method of claim 9, wherein using the second set of lines comprises measuring the congestion of routes across the second set of lines.

11. (Original The method of claim 10, wherein the second set of lines define a plurality of congestion edges, wherein measuring the congestion of the routes comprises measuring the congestion of routes across the congestion edges.

12. (Original) The method of claim 11 further comprising:

once a route is completed, specifying each route only with respect to the route's segments that cross the congestion edges.

13. (Original) The method of claim 8, wherein identifying the route for each net comprises:

starting at a first-set sub-region that contains a pin of the net, successively specifying a route segment that expands the route into a new first-set sub-region until the route traverses all the group of sub-regions that contain the net's pins.

14. (Original) The method of claim 13 further comprising:

at each expansion of a route segment, computing a length cost;

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for each expansion of a route segment across a second-set line, computing a congestion cost based on the congestion of the second-set line.

15.   (Original)   The method of claim 13,

wherein specifying a first route segment comprises examining a plurality of potential route-segment expansions,

wherein for each potential route-segment expansion, computing a length cost;

wherein if the potential route-segment expansion intersects a second-set line, computing a congestion cost based on the congestion of the second-set line.

16.   (New) A method of defining routes for nets in a region of a circuit layout, the method comprising:

a)   using a first grid formed by a first set of intersecting lines to measure length of routes; and

b)   using a second grid formed by a second set of intersecting lines to measure congestion of routes.

17.   (New) The method of claim 16, wherein each net has a set of pins, the method further comprising:

a)   using a third grid formed by a third set of intersecting lines to partition the region into a first set of sub-regions; and

b)   for each net, identifying a route that traverses a group of first-set sub-regions that contain the net's set of pins.

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18.   (New) The method of claim 17, wherein the second and third grids are identical.

19.   (New) The method of claim 16, wherein at least a plurality of the first-set lines are not in the second set of lines.

20.   (New) The method of claim 16, wherein each net has a set of pins, wherein the first grid defines a first set of sub-regions, the method further comprising:

for each net, identifying a route that traverses a group of first-set sub-regions that contain the net's set of pins; wherein each route has a set of route segments, and each route segment traverses two sub-regions in the first set of sub-regions.

21.   (New) A computer program embedded in a computer readable medium, the computer program for defining routes for nets in a region of a circuit layout, the computer program comprising sets of instructions for:

a)   using a first set of lines to measure length of routes;

b)   using a second set of lines to measure congestion of routes;

c)   using a third set of lines to partition the region into a first set of sub-regions; and

d)   identifying for each net, a route that traverses a group of first-set sub-regions that contain the net's set of pins.

22.   (New) A computer program embedded in a computer readable medium, the computer program for defining routes for nets in a region of a circuit layout, the computer program comprising sets of instructions for:

a)   using a first set of lines to measure length of routes, wherein the first set of lines defines a first set of sub-regions;

b)   using a second set of lines to measure congestion of routes; and

c)   identifying for each net, a route that traverses a group of first-set sub-regions that contain the net's set of pins; wherein each route has a set of route segments, and each route segment traverses two sub-regions in the first set of sub-regions.

23.   (New) A computer program embedded in a computer readable medium, the computer program for defining routes for nets in a region of a circuit layout, the computer program comprising sets of instructions for:

a)   using a first grid formed by a first set of intersecting lines to measure length of routes; and

b)   using a second grid formed by a second set of intersecting lines to measure congestion of routes.

24.   (New) The computer program of claim 23, wherein each net has a set of pins, the computer program further comprising instructions for:

a)   using a third grid formed by a third set of intersecting lines to partition the region into a first set of sub-regions; and

b)   for each net, identifying a route that traverses a group of first-set sub-regions that contain the net's set of pins.

25.   (New) The computer program of claim 24, wherein the second and third grids are identical.

26.   (New) The computer program of claim 23, wherein at least a plurality of the first-set lines are not in the second set of lines.

5   27.   (New) The computer program of claim 23, wherein the first grid defines a first set of sub-regions, the computer program further comprising instructions for:

identifying for each net, a route that traverses a group of first-set sub-regions that contain the net's set of pins; wherein each route has a set of route segments, and each route segment traverses two sub-regions in the first set of sub-regions.